

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-16: (cancelled).

17. (New) A soil aerator comprising:
 - a frame member;
 - a plurality of tine racks rotatably coupled to the frame member, each tine rack having a longitudinal axis;
 - a plurality of aeration tines removably mounted to each tine rack, each aeration tine including soil a fracturing face that terminates at an apex portion; and
 - a planetary gear system to rotate the tine racks about their respective longitudinal axes and revolve each of said tine racks about a second axis substantially parallel to said longitudinal axes to urge said aeration tines into a ground surface to form an aeration pocket in a compound motion.
18. (New) The soil aerator of claim 17, wherein each aeration tine includes a cutting tube spaced apart from the apex portion.
19. (New) The soil aerator of claim 18, wherein the cutting tube has a cylindrical shape.
20. (New) The soil aerator of claim 18, wherein the cutting tube has a conically tapered soil-cutting end.
21. (New) The soil aerator of claim 18, wherein the cutting tube is positioned at least about one and one-half inches rearward of the apex portion.

22. (New) The soil aerator of claim 17, wherein the planetary gear system includes at least one planetary gear that rotates around a sun gear.

23. (New) The apparatus of claim 22, wherein the planetary gear system drives the aeration tine into the ground surface and the soil fracturing faces fracture soil to thereby form the aeration pocket.

24. (New) The apparatus of claim 23, wherein each aeration tine includes a cutting tube spaced apart from the apex portion and the planetary gear system drives the aeration tine so that the apex portion penetrates the ground surface before the cutting tube contacts the ground surface.

25. (New) The soil aerator of claim 17, further comprising a plurality of wheels and a tractor hitch coupled to the frame member.

26. (New) The soil aerator of claim 17, further comprising a drive means to impart motion to the planetary gear system.

27. (New) The soil aerator of claim 17, wherein the revolution about the second axis is counterclockwise and the rotation about the longitudinal axes is clockwise when viewed from a first side of said frame member.

28. (New) A soil aerator comprising:

a plurality of holder means rotatably coupled to a frame member, each of said holder means having a longitudinal axis;

a plurality of means for creating an aeration pocket coupled to each of said plurality of holder means, each of said aeration means having a soil fracturing face that terminates at an apex portion; and

a planetary drive means to rotate the holder means about their respective longitudinal axes and revolve the holder means about a second axis substantially parallel to said longitudinal axes to urge said aeration means into a ground surface to form aeration pockets in a compound motion.

29. (New) The soil aerator of claim 28, wherein each aeration means includes a soil cutting means spaced apart from the apex portion.

30. (New) The soil aerator of claim 29, wherein the soil cutting means is positioned at least about one and one-half inches rearward of the apex portion.

31. (New) The soil aerator of claim 28, wherein the planetary drive means includes at least one planetary gear that revolves around a sun gear.

32. (New) The apparatus of claim 28, wherein the planetary drive means imparts a compound motion such that the apex portion of each aeration means is driven into the ground surface and the soil fracturing means fracture soil to thereby form aeration pockets.

33. (New) The soil aerator of claim 28, further comprising a motor to drive the planetary drive means.

34. (New) The soil aerator of claim 28, wherein the revolution about the second axis is counterclockwise and the rotation about the longitudinal axes is clockwise when viewed from a first side of said frame member.

35. (New) A method for forming an aeration pocket in a ground surface, the method comprising:

revolving a tine rack around a central axis spaced apart from a longitudinal axis of the tine rack, the tine rack having at least one aeration tine mounted thereto, wherein each aeration tine has at least one fracturing face that terminates at an apex portion; and

rotating the tine rack about its longitudinal axis, thereby causing the aeration tine to move in a compound motion such that the apex portion penetrates a ground surface to form an aeration pocket.

36. (New) The method of claim 35, wherein the tine rack is coupled to a planetary gear of a planetary gear system, the gear system causing the tine rack to revolve around the central axis and to rotate about the longitudinal axis.

37. (New) The method of claim 35, wherein the aeration tine includes a cutting tube spaced apart from the apex portion.

38. (New) The method of claim 37, wherein the aeration tine penetrates the ground surface before the soil cutting tube contacts the ground surface.

39. (New) The method of claim 38, further comprising:
driving the apex portion into the ground surface;
fracturing soil with the soil fracturing face; and
removing a plug of soil with the soil cutting tube to thereby form an aeration pocket.